MINING UTAH'S HERITAGE
WORKBOOK NEWS
Utah Abandoned Mine Reclamation Program **January 2006**

VISIT OUR WEB SITE AT http://ogm.utah.gov/amr
for information about Utah's natural resources and updates on current happenings.

About the Workbook
Mining Utah's Heritage was designed by AMR Program staff and the State Office of Education to address and enhance portions of the core curriculum for the fourth grade. The abandoned mine safety video, ***Utah's Abandoned Mines: Stay Out and Stay Alive!,*** is available in DVD format and has been mailed to each elementary school in Utah. The DVD comes with bonus material including internet inks to additional educational resources on mining, mine reclamation, and Utah's mining heritage. The green workbook titled ***Mining Utah's Heritage*** is found on the disc along with the answer sheet and teacher newsletter. There is also a student reader published by the State of Colorado and an accompanying teacher's guide and a script for a skit illustrating the dangers of abandoned mines. All the files are in PDF format and can be viewed with Adobe Acrobat Reader (available for free at http://www.adobe.com/).

If you do not have a DVD drive, you can find the bonus material on our website (http://www.ogm.utah.gov/). The DVD's footage of abandoned mines and their hazards is a good way to introduce the workbook to your class!

Why is Mining Important to You?
Mining is an integral yet often overlooked part of everyday life. In fact, the world would be a completely different place if we did not know how to mine, process, and use minerals. A popular slogan often used by the mining industry states "If it wasn't grown, it had to be mined." This holds true for everything made by the human race (try to think of an exception). Furthermore, many of the things that have been grown require processing with equipment and substances that have been mined. For example, the paper you are reading is made from wood pulp processed with calcium, chlorine, and lime using steel machinery. The ink used for printing the words is derived from petroleum.

On the average people consume or use 40,000 pounds of minerals every year. Think about all the things you use everyday. Without rocks and minerals, most of these things could not exist. Gadgets and gizmos including Playstations, Xboxes and MP3 players are made from clay, silicon, metals, and plastics that are taken from the earth. Cars, telephones, bike frames, tortilla chips, polyester slacks--none could be made without raw materials that come from mining.

Mining has Become Safer and Better for the Environment
Mining can t occur without affecting the environment, but great steps have been taken in recent decades to minimize its impact. Abandoned mines from the 19th through the mid-20th centuries caused pollution and deforestation in addition to creating the hazard of becoming trapped or injured in unsafe workings. Many of these mines have yet to be reclaimed and are still very dangerous. Today s mining operations are required by law to guarantee that all the adverse impacts will be contained and then cleaned up. Modern mine operators must constantly monitor things like wildlife, water quality, and air quality. When they are finished mining, they must seal old entrances, reshape the ground, and plant new vegetation to restore the area to its original condition.

How is Your Day Filled with Minerals from Utah?
For nearly 150 years, Utah has been a major source of minerals. Here are some of the state's major minerals, past and present, where they are found, and what they are used for.

Coal supplies the U.S. with about 56% of its electricity. In Utah, almost all (95%) of our electricity comes from coal. Utah contributes over 21 million tons to the 990 million tons of coal used for energy in the U.S. each year. Utah is the 15th largest coal-producing state in the country. During World War II, the former Geneva Steel Mill on Utah Lake, which used coal from Carbon and Emery counties to process iron ore, was the main steel supplier for wartime shipbuilders on the west coast. Many historic coal mines are located near Coalville and throughout Carbon and Emery counties. Abandoned coal mines can be particularly dangerous because they can contain explosive concentrations of methane gas. Several coal mines are still active in Carbon and Emery Counties.

Copper is an excellent electrical conductor and is used in wiring for TV's, stereos, computers, telephones, aircraft, satellites, and automobiles. In the late 1800s, copper was mined from several places in Utah, including near Milford, Eureka, and Lucin. The state's largest copper mine, however, is located at the Bingham Mine on the western side of the Salt Lake Valley. Mining began here in the 1860s, and continues today. Hundreds of millions of tons of copper have been mined from the Bingham Mine, turning what was once a mountain into a pit that is 2½ miles wide and ½ mile deep!

Silver/Gold are precious metals that are often mined together. Both are used in dentistry, jewelry, coins, and in ingots as a store of value by banks throughout the world. Because of its malleability, (a pea-sized nugget can be flattened into a square sheet over 3 feet on a side!) gold is used in intricate electronic circuitry. Silver is also used in electronics, because it is the most conductive metal known. Utah has a rich history of silver and gold mining, with many mines active during the late 19th and early 20th centuries. The largest mining districts were located near Park City, Eureka, Milford, and Leeds. There are literally thousands of abandoned silver and gold mines scattered across nearly every mountain range in the state. Currently, the Bingham Mine is a source of gold and silver in addition to copper.

Uranium is a radioactive element used as fuel for nuclear power plants and for military applications. It is extremely dense, and after it is processed to deplete the radioactive components, it can be used to make armor-piercing munitions as well as armor plating. It was mined extensively near Moab, Monticello, Blanding, and Marysvale during the mid-20th century. Thousands of abandoned mines, some of which are filled with harmful radioactive gases, are scattered throughout the desert between Blanding and Green River. There are no active uranium mining operations in Utah today.

Magnesium is often alloyed with aluminum to make soda and beer cans. Since it is relatively strong and ightweight, it is also used to make automobile rims (mag wheels). The only magnesium mine in the U.S. is located on the west side of the Great Salt Lake. In the 1990s, it supplied almost half of the magnesium used worldwide.

Gemstones are also mined in Utah. **Topaz**, is mined in the West Desert northwest of Delta. Also, the world's only source of red emeralds, also called **red beryl**, is located south of Milford.

Other minerals mined in Utah include **gilsonite** (ink), **potash** and **phosphates** (fertilizer), **beryllium** (electronics), **trona** (baking powder), and **gypsum** (cement).

More Information
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